Ascentac

Optical Reflection Locator

Ascentac ORL500

Versatile Instrument for Single-ended Test & Event Dead-zone as Low as 1m for Precise Troubleshooting

Ascentac ORL 500 Series, Optical Reflection Locator, which is intended for testing immoderate reflections in optical cables uses the exclusive techniques to shorten the event dead-zone to 1 meter. Reflection caused by end-face contamination, poor connections and degraded or damaged fiber can be quickly pinpointed in installation or maintenance of fiber-optic networks. The high accuracy is assured as its less than or equal to -60 dBm return loss measurements

Ascentac ORL 500 Series can be applied for a wide range of functions, including locating reflection point or visual fault, total return loss or insertion loss measurement, optical power measurement and light source output. Testing can be completed with ease by single instrument and will be less constrained whether clients are at home or not. It is all-featured and convenient for technicians at any level to intensify the work efficiency.

Benefits

- 5 fiber-optic test functions in one unit (ORL, Power meter, Light source, Insertion loss meter, VFL)
- Extremely short event dead-zone: 1m
- Widely applicable range of optical power: +10 to -60 dBm
- Storage capacity up to 500 records
- Automatic Pass/Fail analysis

Application

- Locating breaks, severe bends, high-loss splices, dirty connectors or potentially weak network cabling areas

Description

① Easy to carry & lightweight

② Power status indicator

③ Laser-on indicator

④ One-touch automatic measurement Intuitive interface for easy use

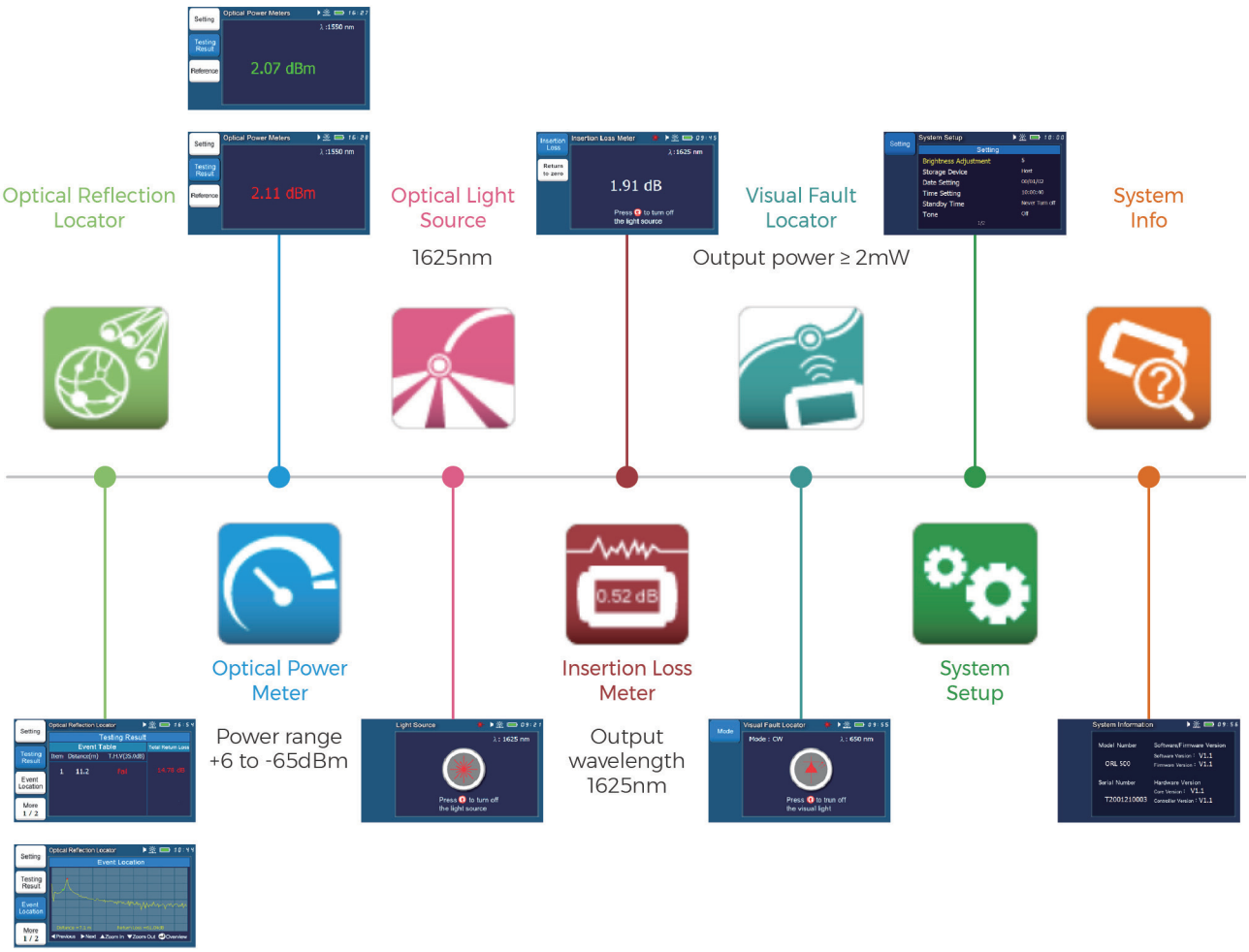
⑤ Shatter-resistant sleeve & IPx3 (Protected against spraying water)

⑥ Outdoor-enhanced 4.3 inch TFT color LCD with backlight function (Comfortable to read display for any abominable environments)

⑦ A stand for hands-free

⑧ Dust cap for protecting optical interface
- a. Visual fault locator
- b. Optical power meter
- c. Reflection locator
- d. Power
- e. USB-A
- f. Ethernet

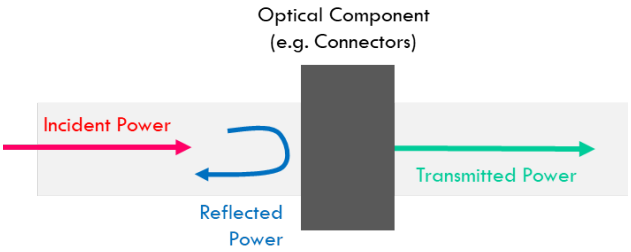
Five Fiber-optic Test Instruments Integrated in ORL500



What Is ORL? & How Does ORL Cause & Impact On Fiber-optic Network?

What is ORL?

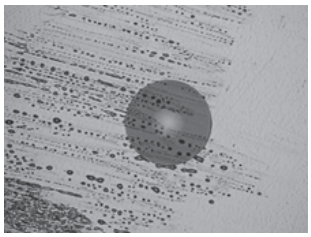
Optical Return Loss (ORL)
Reflectance from all the link components plus the Rayleigh backscatter from the fiber itself

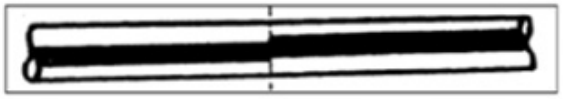


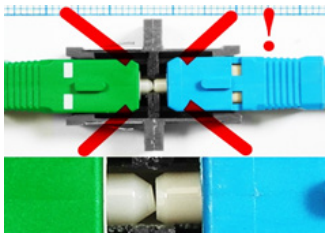
ORL (in dB) = 10log(Pi/Pr)
Pi: Total incident power in Watt
Pr: Total reflected power in Watt
Higher ORL values are desirable because they indicate lower back reflection

Potential Cause

Dirty connectors, poor splices, air gaps, degraded or damaged fiber, etc.





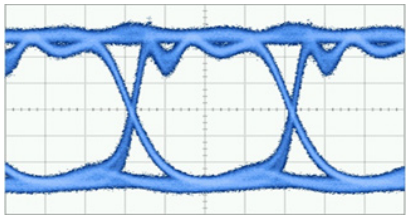


Effect

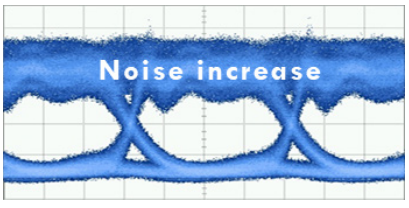
Multipath interference → Degrade network capacity & Reduce signal integrity
High back reflection is critical for the performance of transmission systems, specially image quality degradation in analog video transmission systems.

The reflected energy increases noise floor. This in turn affects the BER (Bit Error Rate).

Without reflection interference



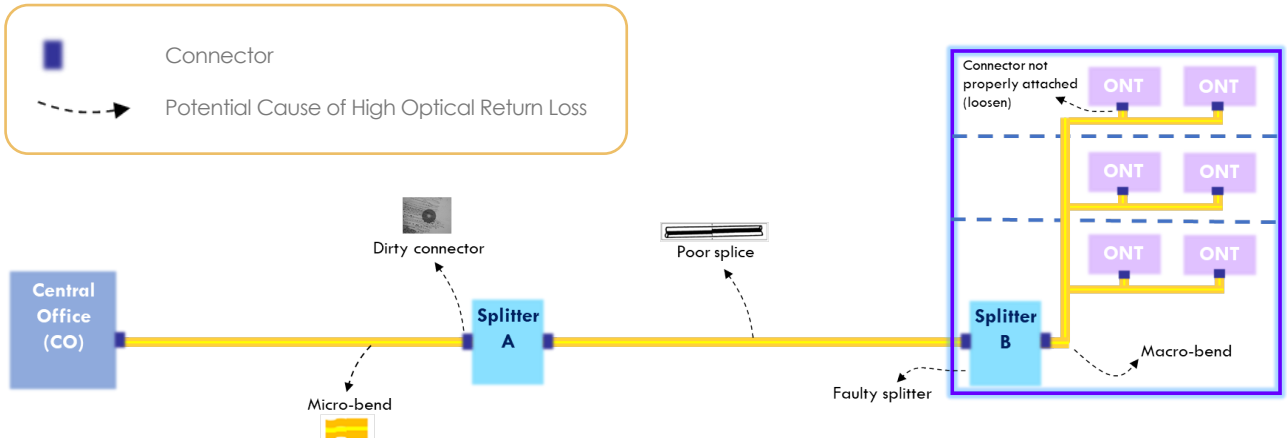
With reflection interference



Where to Use ORL500

Simply by connecting one-end of the fiber to troubleshoot potential causes of high optical return loss.

- Use ORL500 at CO to test return loss from CO to Splitter A
- Use ORL500 at Splitter A to test return loss from Splitter A to CO or from Splitter A to Splitter B
- Use ORL500 at Splitter B to test return loss from Splitter B to Splitter A or from Splitter B to ONT



Specification

Reflection Locator Specification	
Working Wavelength (nm)	1625 ± 5
Measurement Distance (km)	≥ 20
Near Dead Zone (m)	2.0
Distance Accuracy (m)	≤ ±1 @ 0 to 8km ≤ ±3 @ 8 to 16km ≤ ±5 @ 16 to 32km
Distance Repeatability (m)	±1 @ 0 to 8km
Event Sensibility (dBm)	≤ -60 @ Single event
Event Return Loss Repeatability (dB)	≤ 1 @ Identical test distance
Measurement Range of Line Reflection (dBm)	-1 to -60
Accuracy of Line Reflection (dB)	≤ ±0.5 @ -1 to -50dBm ≤ ±0.7 @ -1 to -60dBm
Resolution of Line Reflection (dB)	0.01
Optical Interface	SC/APC
OPM Specification	
Working Wavelength (nm)	1310, 1490, 1550, 1625
Measurement Range (dBm)	+10 to -60
Accuracy (dB)	±0.3 @ +10 to -50dBm ±0.5 @ +10 to -60dBm
Resolution (dB)	0.01
Optical Interface	SC/PC
OLS Specification	
Working Wavelength (nm)	1625 ±20
Spectral Bandwidth (nm)	≤ 1
Output Power (mW)	1
Stability (dB)	±0.2 @ 28°C , 20min. after start-up, for continuous 6 hrs
Operation Mode	CW
Optical Interface	SC/APC
VFL Specification	
Wavelength (nm)	645 to 660
Output Power (mW)	≥ 2
Operation Mode	CW, Flash
Optical Interface	Universal 2.5mm

Memory	
Record Storage	> 500 results (.CVS)
Data Output	USB interface
Display	
4.3 inch ultra-bright TFT color LCD with backlight function	
Power Supply	
DC Input Voltage (V/Amp)	5.0 / 4.0
Battery Life (hours) (with backlight)	> 6
Environment	
Working Temperature (°C)	0 to +40
Relative Humidity (%)	20 to 85, Non-condensing
Dimensions and Weight	
Size (H x W x D) (mm)	124 x 225 x 70.5
Weight (g) (batteries included)	850
Others	
Data Format	.CSV
Interface	1. Type-A USB 2. Mini USB 3. 10/100Mbps Ethernet RJ-45
Ingress Protection	IPx3
Standard Accessories	
Main unit, Adaptor cleaning sticks (2.5mm) 10pcs, Carrying bag, Shoulder strap, Built-in lithium battery, Power adapter, Power cord, One-year warranty	

Ordering Information

ORL 01-005XX+ A0-0022X

ORL Wavelength
01 : 1625nm

Power Cord with Plug
2 : Power cord with US plug
3 : Power cord with EU plug
4 : Power cord with UK plug
5 : Power cord with AU plug

Note : 1. ORL with built-in SC/APC adaptor.
2. Incl. Optical Light Source (OLS) with wavelength 1625nm and built-in SC/APC adaptor.
3. Incl. Visual Fault Locator (VFL) with output power ≥ 2mW and built-in universal 2.5mm tip sleeve.
4. Incl. Optical Power Meter (OPM) with power range from +10 dBm to -60 dBm and built-in SC/PC adaptor.

Option

Battery	
A0-00501	4.2V 13360 mAh Lithium
Adaptor & Power Cord	
A0-00221	AC Adaptor
A0-00222	Power Cord with US Plug
A0-00223	Power Cord with EU Plug
A0-00224	Power Cord with UK Plug
A0-00225	Power Cord with AU Plug
Fiber Optic Cable	
A0-00601	Single Mode 9/125--SC/UPC to SC/UPC--2m
A0-00602	Single Mode 9/125--SC/UPC to LC/UPC--2m
A0-00603	Single Mode 9/125--SC/UPC to ST/UPC--2m
A0-00604	Single Mode 9/125--SC/APC to SC/UPC--2m
A0-00605	Single Mode 9/125--SC/APC to LC/UPC--2m
A0-00606	Single Mode 9/125--SC/APC to SC/APC--2m
A0-00607	Single Mode 9/125--FC/UPC to FC/UPC--2m
Adapter Cleaning Sticks - 100 pcs/box	
02-0A110	1.25mm without ESD (Electro-Static Discharge)
02-0A120	2.5mm without ESD (Electro-Static Discharge)
02-0B110	1.25mm with ESD (Electro-Static Discharge)
02-0B120	2.5mm with ESD (Electro-Static Discharge)
Fiber Cleaner - 400 wipes/pc	
02-00411	Reusable Fiber Cleaner--1 slot
02-00412	Reusable Fiber Cleaner--2 slots
02-00421	Cartridge--1 slot
02-00422	Cartridge--2 slots

Example : ORL 01-00501
Option: A0-00501, A0-00221, A0-00222, A0-00604

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